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NEWFOUNDLAND AND LABRADOR.

THE tidings that thousands of the inhabitants of Newfoundland and Labrador were in a state but little removed from absolute starvation have recently startled the civilised world, and in many places prompt measures were immediately taken to alleviate the sufferings which they were said to be enduring. To blacken a picture whose every detail was dark enough, it was further reported, at least on this side of the Atlantic, that hundreds of the unfortunate sufferers had succumbed to their misery, and that their bodies had been savagely devoured by troops of hungry Polar bears, which had been driven to the coast by hunger. The interest and sympathy of multitudes were excited, and the question was being asked on all sides, 'What can we do to help?' While the hearts as well as the heads of philanthropists were thus devising schemes by which to succour and relieve their less fortunate brethren, a third report was spread, giving an unqualified denial to its predecessors, which, it asserted, had been cruelly invented by an enterprising Canadian journalist for base and unworthy motives. Which report are we therefore to believe? Beyond the shadow of a doubt, the bear story is a pure fable; equally fabulous is that which relates the number of deaths which are said to have resulted from starvation.

The truth seems to be, as far as can be gathered from available sources of trustworthy information, that the cod-fishery, both on the coast of Labrador and also in the greater number of fishing stations in Newfoundland, has been an entire failure, and that hundreds of families are consequently almost or wholly destitute. From a recent letter, received by the writer from a friend resident in the north of Newfoundland, we learn that the cod and herring fisheries in his district have been unusually good, and the fish of exceptional excellence; but this can in no way make up for the distressing failures which are resulting in such widespread and genuine misery in all the other parts of the island.

It has occurred to the writer that the present is a favourable time to convey to the readers of this *Journal* the information resulting from his observation of people and things during the period of two years which he recently spent in the island of Newfoundland.

It must first be remembered that the population—numbering about two hundred thousand—of both countries depends mainly upon the various fisheries which they prosecute for their subsistence; hence the fluctuating nature of their temporal condition. This will eventually result in the direst misery, and naturally so; for while the quantity of fish taken remains stationary, with an uncomfortable tendency to diminish, the population increases with alarming rapidity; and various symptoms are quickly developing themselves of the untoward fate which must sooner or later overtake the colony of Newfoundland, unless matters which at the present time are all awry and clamouring to be righted, are subjected to a radical reformation. So long as the unjust truck system is permitted to exert its evil influence amongst the people, it matters little whether the fishery be good or bad, they will always be in a state of poverty. But there is the further reflection, that even if the truck system were abolished, and full cash value paid for the fisherman's produce, the catch of fish would not of course be thereby increased. We are therefore confronted with the momentous fact, that people must either starve or turn their attention to some other means of gaining a livelihood; and the important question arises, what that other means shall be?

It has been said, by those who ought to know, that Newfoundland possesses agricultural capabilities of a high order, which only await the advent of the plough and the strong arm of labour to develop and to produce prodigious results. The writer is not prepared to deny this *in toto*; but he is fully persuaded that the picture is overdrawn, and that, if the soil were subjected to a trial, this would be apparent. It is further said by a recent writer on the subject that the island contains five million acres of land admirably

fitted for agricultural and grazing purposes. To talk and write in this way, however eloquently, is to waste time. If all that has been written and said upon the subject of the agricultural capabilities of Newfoundland is true, why is not immigration encouraged, and the immigrants, together with those of the native population who have the wish, but not the means, to become agriculturists, supplied with implements and grain until they have tided over the first year or two? It is patent to all who have studied the matter with the attention it demands, that the time is fully ripe for action, and that 'sharp and decisive,' if the inhabitants of Newfoundland are not to degenerate into a colony of paupers. It is equally clear that, with the largely increased and still increasing population, the cod-fishery can no longer be relied upon as the sole means of subsistence; and unless something is done by those in authority and others—of whom there are many who have reaped rich harvests of golden coin from the toil of the poor struggling fisher-folk—to remedy matters, the unanimous verdict of posterity will be against those who, from whatever motive, were instrumental in effecting the change which made Newfoundland what it was never intended to be, anything more than a mere fishing station of the British empire.

Again, it is a fact that the mineral resources of Newfoundland are practically exhaustless, and that, if they were turned to account, there need never be much destitution amongst the people, at least of such magnitude as that which exists at the present time. But it seems that all the mines which are of any practicable value are found on that part of the coast which is known as the 'French Shore;' and at every successive attempt which has been made by Englishmen to open up these mines, they have been met by the most serious and determined opposition on the part of the French, who presume thus in consequence of the very vague wording of the treaty made between the French and English governments by which their respective fishery rights are secured. So powerful has this opposition become, that work on the mines has had to be permanently suspended; and for some mysterious reason, the colonial, as well as the imperial government, has treated the matter with supreme indifference, or at least they have so far done simply nothing to effect a final settlement of the dispute, which is of vast importance. It is high time that some determined and united action were taken, by those to whom the welfare of the country is committed, to remove the serious obstacles which undoubtedly exist in the way of that section of the people of Newfoundland who would fain abandon the precarious and profitless life of fishermen, and secure employment which would at once be permanent and remunerative, and, in the future, afford an importance to the colony, which, so long as it depends on an annual catch of cod-fish, it can never enjoy.

The Newfoundlanders are an industrious and intelligent race; and they would not be slow to make the most of any advantages which might be procured for them, and by which they might improve their position, which hitherto has

never been better than that of a mere hand-to-mouth existence.

There is the last, but by no means the least important consideration, that of the seal-fishery, which, for the past fifty or sixty years, has brought almost fabulous wealth to a section of the community. It is now, however, failing, in consequence, it must be said, of the wholesale destruction which has been made of this valuable animal, alike in summer and winter, by those whose interest it was to preserve, and not, as they have almost succeeded in doing, to exterminate it.

RICHARD CABLE, THE LIGHTSHIPMAN.

CHAPTER V.—HANFORD HALL.

MR GABRIEL GOTHAM lived in what was called Hanford Hall, but in Essex, every farmhouse is a Hall. It was, however, the manor-house, and was the best house in the place—a long rambling building, plastered, and the windows painted Indian-red; a house long and shallow. It was embowered in trees. The grounds were not extensive, but they were pretty. A steep slope to the sea, with noble elms on it; a set of terraces, where roses grew luxuriantly, and where, in summer, the beds of calceolaria and geranium made a gay contrast to the dense green of the trees and the sweeps of grass. Here and there on the terraces stood statues of plaster painted, somewhat spotted with black and green decay. The terraces were gravelled from the beach with grit that would not bind, and was carried about by the boots of him who walked on it over the grass and into the rooms. The entrance gates were somewhat pretentious; the posts supported heraldic lions holding shields; but these also were of plaster, not stone, and were painted.

When the tide was in, the view from the terraces and from the windows of the house was very beautiful, through peeps among the elms to sea, and across Hanford water to a coast beyond, also studded with trees. The water was generally enlivened by passing sails, as Hanford was a colony of fishermen, either owning their own boats or going shares as a company in one smack. Barges came to Hanford with coal from Yorkshire and Newcastle; and barges left Hanford piled up on deck with straw, veritable floating stacks, for London. At certain seasons, the sprat-fishery supplied the farmers with unctuous dressing for their fields; at such times, clouds of gulls fluttered over the land thus manured, and unless the fish were quickly ploughed in, rapidly reduced the supply spread over the surface. At such times, the inhabitants of Hanford gifted with the sense of smell were heartily glad when the plough did turn the glebe over the dead fish; but there was a worse smell than that of sprats to which the Hanfordians were periodically subjected, and that was when a shipload arrived of what was locally termed 'London muck,' that is, the scrapings of the London streets and the refuse of the

London ashpits. When such a cargo arrived, it announced its presence to leeward for two or three miles; whereupon the farmers lifted up their noses, ordered out their wagons, and distributed the stench broadcast over the country. The gulls were unattracted by this dressing; consequently, the farmers were less precipitate in working it in.

At all times, daily, throughout the year, the noses of the Hanfordians were required to inhale the effluvium of decomposing weed when the tide went out, and so nature providently blunted the organ against offence through the periodical dressings of sprats and London muck. The smells, if not pleasant, were salubrious, according to the opinion of the inhabitants; and, to judge from their robust forms and florid complexions, these odours cannot have been noxious.

The marshes, backwaters, and ditches bred countless mosquitoes, which lay in wait for strangers, whom they tortured to madness; but they did not touch natives. On a warm summer evening, the gnats might be seen hovering in clouds over the elms and oaks, so dense and so black, that the stranger supposed the trees were on fire and smoking. The mosquitoes brought birds, and the trees resounded with the song of nightingale, thrush, and blackbird. In winter, the water was covered with gray geese and wild-duck, and the shooting of these occupied the men, when nothing was to be got by the fishing.

What was it that made Mr Gotham start and tremble and shrink back, as he passed through the side-gate for foot-passengers into the grounds? Before him stood a woman, old, with gray hair, holding a baby in her arms, whilst two little children clung to her skirts. She was a fine woman, commanding, with bright eyes, and a strongly marked nose. She held herself very erect, and there were dignity and sternness in her manner and attitude as she confronted Gabriel Gotham. He, quivering and speechless, shrank from her, as trying to hide himself from her eye. He had occasion thus to cower before her; for if ever a despicable man had done a dastardly act, that man was Gotham, and the proud woman before him was the one he had wronged. Gabriel Gotham's father had been a solicitor at Newcastle; but his uncle, Jeremy Gotham, a successful merchant, had purchased the manor of Hanford and the Hall. Jeremy had lived there in his old age, and as he had no children of his own, invited his nephew, Gabriel, to stay with him; also his brother and his sister-in-law occasionally. As a boy, Gabriel liked to be with his uncle; the old man made much of him, and was liberal in supplying him with pocket-money. He had a pony and a boat at Hanford, and was called by the hangers-on 'the young squire.' But Gabriel was a weak, lanky boy, badly put together, without colour in his cheeks, and with pale blue eyes and fair limp hair—not at all the ideal young squire that his uncle would have desired as his successor. He supposed that the boy had been overworked at school or overtaken in his father's office, and insisted that the sea-air of Hanford would set him up. He urged him to out-of-door pursuits, to ride with the hounds and to row. But Gabriel preferred to jog to the meet and then ride home; and if he went out in the boat, to sit in the stern

with his hands in his pockets and let some one else row him.

Jeremy was very proud of his position as lord of the manor, and made himself disliked by exacting all kinds of rights which he believed to be his legally, but which had been ignored or encroached on by the fishermen of Hanford. By the shore was a piece of sandy ground overgrown with coarse turf, occasionally covered by tides of extraordinary height. On this the Hanfordian youth were accustomed to play cricket. Jeremy Gotham laid claim to it; as lord of the manor, it was his. If the young men ran over it, they would establish a precedent, and he would be unable to inclose and extend his grounds in that direction. Consequently, he hailed it off. Thereupon the young men tore down his rails. He repalised the ground: it was again assailed. Then ensued a lawsuit, which he gained. But he had accumulated against himself so much ill-will that he was fain to accept a compromise, and allow the cricket club the use of the land for a small annual acknowledgment. Then, again, as lord of the manor he had heriot rights over two farms; and on the death of one of the farmers, he demanded the two best horses out of his stable. He had a right to the horses; but to exact his right was unwise, and brought on him bitter ill-will. There was a copious and unfailing spring in his stable-yard. The villagers were badly off for drinking-water, they were supplied with surface-water collected in tanks. This failed in dry summers, and they came with their cans and pails to his pump. He bore the inconvenience a little while; but when a farmer sent a barrel on a cart to be filled, he put a chain and padlock on the pump, and refused to remove it, and allow of water being taken from his well except at an acknowledgment—every cottager to pay him a shilling per annum, and every farmer five.

The dislike felt for the retired merchant who had set up as squire extended to his nephew; and Gabriel was jeered at when he rode out, and had stones or mud thrown at him when he showed himself in the village street. He was conscious of his own deficiencies, because told of them by his uncle, and because they were flung contemptuously in his face by the village lads. At the same time, his position as heir to the estate and house made him proud, or rather—for there is dignity in pride—conceited. Thus he grew up a mixture of diffidence and vanity. At the lodge lived a woman who had been wife of the boatman of the former squire, a Cornish woman, named Cable. She was left with an only daughter. Her husband had been drowned one night going out in a punt after wildfowl. Mr Jeremy Gotham kept her as a lodge-keeper, and she did charing in the house. The daughter was two or three years older than Gabriel, a strong handsome girl, determined in character; and she constituted herself the protector of the young squire. When he had been assailed with stones or bad words, he would tell her; and if she knew the name of the offender, and he was of or near her age, she would chastise him with her fist or with a stick. She often rowed him out, when he had a fancy to be on the sea, and looked after him—that he had his greatcoat with him; that he wore his muffler; that he did not wet

his feet, or, if they were wet, that he changed his socks as soon as he came home. This sort of intimacy had sprung up when they were children, and continued when they had grown up. No one thought seriously of it, as she was older than he, full of sense and strength of purpose; and he, a weak, washed-out creature without manliness. Nevertheless, she became attached to him. She was one of those strong characters which do not look for a support, but to become a support, and find satisfaction in sustaining the feeble creeper that pulls itself aloft by its means. There were several young fishermen in Hanford who tried to get Bessie Cable to walk out of a Sunday with them; but she gave encouragement to none, and finally left the place as servant to Mrs Giles Gotham of Newcastle, who had taken a fancy to her when on a visit to her brother-in-law. Mrs Giles could never get on with her servants, and laid all the blame on the Newcastle girls. If she could induce a young woman to come to her from a distance, she would be sure of keeping her for a twelvemonth. Moreover, the mother of Bessie being in the service of the Gotham family, the daughter might be reckoned on to do her utmost to have the interest of the Gothams at heart. The handiness, the willingness, the robustness of Bessie, pleased Mrs Giles; and so Bessie, whom her mother relinquished somewhat reluctantly, departed with her to Newcastle.

Gabriel remained with his uncle some time after his mother left. He was now a young man, who looked as if a good shake would shake him to pieces. His legs and arms hung too loosely to his trunk, his back was bent. He never, apparently, could get a tailor to master the conformation of his body and clothe him well. He mandered about, after Bessie was gone, much at a loss for a companion. He had clung to her and made an associate of her, had looked up to her and trusted her; and very forlorn he felt when deprived of her company and protection.

One day, a few months later, Mrs Cable died suddenly of a stroke. The distance from Newcastle was too great for Bessie to come down to the funeral, and the poor woman left but a few trifles for Bessie to inherit. These Gabriel undertook to have put away safely for her.

Before Christmas, Gabriel went home to Newcastle, taking with him such things of her mother's as Bessie wanted. His uncle was reluctant to let him depart, but could not dispute the right of his parents to reclaim him for a while. At Easter, Gabriel was to return to Hanford Hall. But at Easter, Gabriel did not appear; at midsummer, however, he did, looking the same—a limp creature without vigour of body or mind. What had happened in the interim between him and Bessie, his parents and uncle—only these interested parties—knew. What had occurred was this. On his return to Newcastle with plenty of money, which his uncle had given him, Gabriel was delighted to renew his friendship with Bessie. But circumstances were different. She was servant in his father's house, and that house was in the town. She had her duties, and could not row him on the sea or saunter with him in the garden. He found his way down into the kitchen, to complain to her about his mother's tyrannical ways; but Mrs Giles came after him

and pinned a dishcloth to his coat, and warned him not to go below stairs again.

Gabriel was almost a stranger in Newcastle, and had no friends there of his own sex and age. He was not a man to make friends, except of boys and girls. He was not muscular enough to feel himself the equal of those of his own age; he could not cricket, or shoot, or play billiards. If he found a boy before whom he could swagger, he would take him up for a day or two and patronise him and give him tartlets; but boys speedily found him out, and despised him and deserted him; occasionally, he caught them caricaturing him. Girls did not pay him attention; they slighted him; only Bessie Cable stood by him, ready to fight his battles and hold him up, and be to him the tower of strength he needed. His father despised him; his mother bullied him; but Bessie loved him with infinite pity and disinterested fidelity. He was flattered and touched, and in his loneliness drew towards her the more because forbidden to associate with her.

One day, both had disappeared from Mr Giles Gotham's house. Gabriel had persuaded Bessie to elope with him over the Scottish frontier and to be married. Married they were in Scotland; and from Scotland, Gabriel wrote to his father and his uncle announcing the step he had taken. He received no answer from either. He remained in Scotland with his Bessie for some weeks, as long as his money lasted, the money wherewith he had been provided by his uncle; and when that was expended, he wrote for more. Then he heard from Mr Jeremy Gotham. His uncle was furious. He would disinherit him, unless he at once separated from the low-born maid-of-all-work he had mated with, and whom Mr Jeremy absolutely refused to acknowledge. Then, Gabriel wrote a penitent letter to his father. Mr Giles came to Scotland, and discovered that the marriage could be invalidated. According to the Act of Parliament on the subject, one of the parties contracting a marriage in Scotland must have been resident there twenty-one days previous to the ceremony. Gabriel had not resided there with Bessie the full time: it was short by exactly five hours; therefore, the marriage could be upset. With Gabriel's consent, it was upset. He was in no position to earn a livelihood; he was destitute of private means; he listened to reason, as his father said, and deserted Bessie. Mr Giles had the marriage cancelled; and when Bessie became a mother, her child was not qualified to bear his father's name.

Three years passed before she reappeared in Hanford with her boy, Richard. There she remained. Of her story, nothing was known; she never spoke of it. She had lost her character whilst in service, people said; but so had many another maid, and the particulars did not transpire. Gabriel was received again into favour by his uncle. He and Bessie never met again to speak; she avoided him, as he avoided her. In his base mind rankled a sense of degradation, of shame for his desertion of the faithful creature. Her pride sustained her. She could not forgive his treachery. So she lived by herself, and reared her son, and the son did not know who was his father.

No wonder that now, after a lapse of but a little short of forty years, Mr Gabriel Gotham started and shrank from the woman he had wronged, when she broke through her reserve and came to meet him within his own gates.

(To be continued.)

COLLIERY EXPLOSIONS AND THE DAVY LAMP.

It is more than seventy years since Sir Humphry Davy constructed his safety-lamp. During all that time it has been greatly used in coal-mines. The British miner is but slightly acquainted with any rival. Of late, authoritative opinions have been expressed that the protection it affords is less efficacious than could readily be attained. Yet, throughout all the period named, no experience has been made known that bears on its alleged defects with an instructive force comparable to that of a story which has been told about a recent explosion at Woodend Colliery, situated betwixt Tyldesley and Leigh. The tale is that of a man who saw, directly and plainly, the origin of the catastrophe. He is thus able to explain what has hitherto been the subject of surmise, authenticated partially by circumstantial evidence, or by analogies drawn from artificial experiments. He saw how the explosive mixture and the exploding flame came together. His testimony demonstrates that if there be need for a better class of lamps in mines, much greater is the need for a more careful handling of them by the miners.

The chief component of the explosive mixture is carburetted hydrogen, with unequal proportions of olefiant, nitrogen, and carbonic acid gases. According to these proportions, the compound, when mixed with atmospheric air, shows different degrees of inflammability. The hydrogen is the chief, perhaps the only, inflammable constituent. It contains two volumes of hydrogen, and one of vapour of carbon. It is the confinement of this gas which causes it to explode. Left free, it is harmless as loose gunpowder. If the proportion of olefiant in combination with it be large, its inflammability is increased. If nitrogen or carbonic acid is present in quantity, the inflammability is diminished. In no case will it explode so as to occasion a mine accident except when it mingles with atmospheric air in a rate varying from seven to twenty-five per cent. Under seven, the gas is too diluted and diffuse: over twenty-five, common air does not contain sufficient oxygen to combine harmfully with so large a proportion. The most dangerous ratio has been found to be about twelve and a half per cent. Davy, following up a series of experiments which gave him the materials for his first Bakerian lectures, discovered these facts early in 1815, when he turned an earnest attention to the hazards of mining; and in November of that year he laid his discoveries before the Royal Society. They have since been substantiated by ample corroboration. The gas described is the firedamp of the collier. It exists in varying quantity throughout coal-strata in general. Cavities in and around the coal-seams are filled

by it, often in a highly compressed state. When the workings advance so that these receptacles are pierced, the hitherto confined gas rushes forth with a hissing sound, and the workmen name them 'blowers.' When it exudes in great plenty from many apertures, the pit gets the reputation of being 'fiery.' The more bituminous the coal, the more readily it *cakes* when burning, so much the more does it for the most part contain of this dangerous aeriform gas.

The exploding flame is also gaseous matter heated so intensely as to become luminous. Simultaneously with his investigations as to the explosiveness of firedamp, Davy also prosecuted experiments regarding different modes of its contact with ordinary light derived from artificial sources. He ascertained that in tubes the seventh of an inch in diameter, explosive mixtures of air and damp could not be fired, as also that metallic tubes were better preventives than glass. Upon this he acted in designing his safety-lamp, which was planned and finished between the middle of November—when he reported to the Royal Society—and the commencement of the ensuing year. The lamp is a simple contrivance. It consists of an oil-fed wick inclosed in a wire-gauze cylinder six inches long by one and a half in diameter, with a double piece atop. The standard first adopted for the number of apertures in the gauze was twenty-six for every linear inch, or seven hundred and eighty-four to every inch square, now sometimes reduced to six hundred and twenty-five. Through these apertures the flame will not pass except by applied force; and the cooling influence of the wire-gauze is such that though the firedamp may get in, yet, in an ordinary case, neither it nor the external air will explode, the quantity that surrounds the wick giving forth a feeble blue flame, which in extraordinary cases may fill the whole interior. This is a signal of danger not to be neglected. Should the wire-gauze, notwithstanding its efficiency as a conductor of heat, become incandescent, then a powerful 'blower,' suddenly discharged, may either extinguish the lamp, or drive the flame through the gauze with most disastrous consequences. The Royal Commission on Mines, that sat five years ago, concluded that a system of ventilation which drives the atmospheric air with great velocity, mingling it with the firedamp which it is meant to carry off, may produce exactly the same result. There is no reason to doubt it; though the fact illustrates how the attainment of a desired benefit may be marred by bringing with it an accompanying evil. How best to get air into coal-mines, causing it to circulate rapidly through every hole and corner, has long been an object of practical regard, and astonishing improvements have been effected on the early and imperfect modes of attaining this end; but if they induce counter-hazards, if improved arrangements for putting in air give rise to a necessity for equal improvements in the method of putting out fire or avoiding it, then, pending their discovery, the gain will be more than questionable.

Both air and fire are powerfully affected by outside influences. Atmospheric changes tell upon the ventilation of a mine when that ventilation appears to be most efficient. Thus, a pit may be well supplied with air during a whole day,

and show every sign at its close of being safe and free, yet, ere the morning a variation in atmospheric pressure may cause such a difference that it is unfit for being entered. Should the weight of common air be lessened, the 'blowers' will be relieved from opposition, and much gas will be released from the hissing crevices of the coal, as well as from the old waste places of the mine, called *gouves*. It is very probable that several unexplained explosions are attributable to this cause; and there is much likelihood that it helped to enhance the violence of the Woodend catastrophe. High winds will change the temperature and the weight of air; and it is always found that a sudden fall of the barometer is closely followed by a derangement of pit ventilation. Hence the propriety of diligently observing barometric changes; while it would be well to discover by a large induction of instances whether the presence of gas is in anywise, like the prevalence of certain weathers, distributed in areas. Another hazard is that which is connected with the comparative density or minuteness of coal-dust. In a dusty mine, the abundance of particles lowers the proportion of firedamp which forms an explosive mixture, extends the flame once it has passed the barrier of wire-gauze, and, by its own partial combustion, increases the poisonous and suffocating character of the air which remains to be breathed. The Woodend pit was dusty; and it seems well nigh evident that the characteristic qualities of such a pit were evinced in connection with the mishap. Still, though such conjectural explanations may supplement, they will not invalidate, the distinct and remarkable narrative of the survivor.

His name is John Wooley. He is not an experienced working collier. His labour was the removal of props at the end of a *goaf*, where the workings have been long exhausted. Within sight of him was another man, Brown, apparently more unskilled, whose duty was to clear away rubbish from the coal-hewers. He had a Davy lamp swinging betwixt his legs from a strap. Wooley says this lamp was fired. 'The gas began coming into his gauze; his gauze burst. Brown shook his lamp, and blew into it. I saw the light flash from it, and there was a terrible report.' He then recounts how he was knocked over and burnt by the flame, as also how he found relief from putting his mouth to the cold iron rail on which the trucks ran, which 'gave him breath,' and 'seemed to revive' him, enabling him to hold out till he was extricated. It was a remarkable deliverance, unexampled by the record of any exact precedent or parallel; and it is replete with suggestions which ought to be as largely influential as they are instructive.

The narrative substantiates in so far the conclusions adverse to the Davy lamp which have been lately indicated. They were expounded in the clearest and most effective manner by Professor Sir F. Abel in a contribution he submitted to the Society of Arts. Agreeing with the Royal Commission on Mine Accidents as to the inferences derivable from their painstaking investigations, he pronounced it certain that with a velocity of air amounting to thirty or thirty-five feet per second, the lamp must cease to afford security. This, however, though it was brilliantly illustrated, did not amount to a new

revelation—it was only to reiterate what has been long familiar. It tallies with reason; it has been confirmed by experiment; it was admitted by Davy himself. He proclaimed with emphasis that his lamp was not an infallible protector; that it gave a guarantee for safety only under certain conditions; that the flame would undoubtedly pass through the gauze in such circumstances as occurred at Woodend. The inquiry thus comes to be: ought the protecting influence of a brisk ventilation to be abated in order to avoid a related danger? or can science so amend the safety-lamps which are in use as to reconcile the two benefits of fresh air in abundance with freedom from explosions? The reply would be easier were the benefits of ventilation, taken separately, well assured. It must be remembered, however, that a large quantity of air is not the sole necessity; much depends on how it is distributed. A mine with a small circulation of air properly sent through all its various passages may be better ventilated than one with a large circulation injuriously applied. Especially is this the case if the air-current so visits the dikes and slips by the sides of which the firedamp collects as to dilute them merely up to the explosive point, for then is good turned to evil, and the intended benefit may prove fraught with extreme peril. This has been exemplified in circumstances wherein the best lamp, most skillfully handled, would not have availed as a preventive.

Still, though the Davy must ever remain a fine instance of inductive and experimental research, it is not in all respects the best lamp now. It were strange had perfection been reached at once, so that no advance was possible during seventy years. The progress made has been slow, though many efforts have been put forth. The oldest rivals to the Davy lamp are the Clanny and the Stephenson—famously named by the miners of the north 'the Geordie,' after its famous inventor. Neither is so much liked by the workmen, for they yield less light and require great care in use. Both have shared the condemnation pronounced upon the Davy, as being insecure if exposed to air-currents of even moderate velocity. Belgium has been a fortunate competitor in the provision of a substitute. Many years ago, the Belgian government recommended the invention of one Boty, a citizen of their own. Four years since, a French Colliery Commission advised the adoption of the Mueseler, the work of another Belgian, who had combined the Clanny and the Stephenson, adding original improvements. In their last Report, the British Commission speak favourably of it in a form still further amended, with the view of overcoming two grievous practical defects—one, that when quickly turned it is apt to be extinguished; and another, that its light does not reach the roof of the mine, so that the workers are exposed to danger from the fall of detached masses, and that it is impossible to get through the same amount of labour by its aid.

It is represented that these objections have been obviated by what is called the 'bonneted' or 'protected' Mueseler. The claim seems to be valid, for a Welsh miner told the Commission: 'We can see six yards better with it than we can see three with the other'—that is, the ordinary Mueseler. The Commissioners, notwithstanding,

gave the preference to a lamp contrived by a Welshman, Evan Thomas. He has also taken as the base of his activity the invention of Dr Clanny—an intellectual and philanthropic man, who got little of fame or profit from his labours in this department of exertion. The modifications introduced by Thomas seem, however, to have been very successful. The Commissioners say of the lamp as he has altered it: 'The flame is bright, and remarkably steady in the strongest air-current we can produce. In an explosive atmosphere moving with a velocity of three thousand two hundred feet per minute, it showed no sign of danger after an exposure of nearly eight minutes. With current velocities down to four hundred feet per minute, the gas always burned continuously in the gauze, which did not become visibly hot till the velocity approached sixteen hundred feet. The lamp-flame was in all cases extinguished in the gas mixture in a few seconds.' This last contrivance, it should be said, is borrowed, with improvements, from Stephenson. If the experience of practical men should confirm that of the Commissioners, then Evan Thomas's device ought forthwith to become the lamp of the future, and to keep its place till an unquestionable masterpiece appears.

But the astounding negligence and rashness of colliers are such as to defy enumeration or conjecture. In this Woodend case, it seems indisputable that with ordinary sense and precaution the calamity might have been avoided. Brown, at whose lamp the ignition took place, had obviously slight experience as a miner, yet he was employed at the end of a *goaf*, which is usually a reservoir of carburetted hydrogen. Wooley was at the same time engaged in removing props, an operation likely to disturb the strata, and so to cause a discharge of the gas accumulated in that deserted portion of the pit where the ventilation, unless exceedingly well managed, often does not reach, and sometimes reaches only to aggravate risk. Brown must have been ignorant about lamps, for he had his swinging between his legs, an arrangement which only a very stupid or a very careless man would have adopted. He must have been equally ignorant about firedamp, for when he found the whole interior inside the gauze aflame, instead of removing to the place where the lamps of Wooley and his companion showed that the gas had not reached, he halted amid the explosive atmosphere and blew into his own; a method than which none could be better fitted to bring on the disaster which ensued. Wooley has erred in saying that the lamp burst immediately after, for it has since been found uninjured; but it is certain that no expression could better describe the appearance that must have struck him when the flame burst through the gauze, and was instantly followed by the explosion. That the safety of the Thomas lamp will be lessened when it is less carefully handled than it was under the inspection of the Commissioners, may be assumed. When the hardihood, bred of familiarity, which prevails among colliers is considered, then large allowance may be made for extra risks. It is known how prone they are to the use of naked lights; with what ingenuity they can unfasten even the lock invented by Mr Bidder as a protection for the Davy lamp; what a strange disposition they show to leave

it dingy and foul, though no one has ever heard of a Davy, properly cleaned, 'bursting' while immersed in gas, through the strength of gas alone. The general conclusion is, that wanton laxity or reckless evasion will defeat the most skilful invention backed by the utmost rigidity of rule, and that the safety of the miner must always depend in large measure less upon ingenious contrivance or precise regulation, than upon the conscientious forethought and prudence of himself and his fellows.

TOLD BY TWO.

A NOVELETTE IN FIVE CHAPTERS.

CHAP. V.—THE NARRATIVE OF EMMELINE BURT
CONCLUDED.

TIME passed on, and soon the eventful day was here. Great preparations had been made in honour of the occasion; but of these I should have known little, had it not been for garrulous Mrs Case, who, notwithstanding that she was, as she said, 'nearly driven out of her mind,' yet contrived to find time for her customary gossip. It was from her I learned that Mr Bruton and Mr Felix had been away in London for a day, but that they had returned together on Tuesday afternoon. Early on Wednesday morning, Mr Bruton himself went over to Cheriton to fetch her ladyship's diamonds from the bank.

I had seen nothing of Mrs Ion since that night when I had watched for her in the park; we had not even met casually on the stairs, as we had not unfrequently done before. It almost seemed as if she were shunning me of set purpose.

In the afternoon, after his return from the bank, Mr Bruton took his nieces for a canter across the downs. From my window I watched them start. Mr Bruton happening to look up, recognised me, and smilingly raised his hat. As I sat at my window, I saw Mr Felix, smoking a cigar, pass and repass several times at a distance. He seemed to be strolling aimlessly about the grounds, enjoying the fresh air and the sunshine. What would the next few hours bring forth? If any attempt were about to be made to purloin the diamonds, it would have to be made that night or not at all, seeing that on the morrow they would be returned to the custody of the bank. All day I was restless and uneasy, and unable to settle my mind to anything. I experienced the same quivering tension of the nerves that always affects me in thundery weather. For me the moral atmosphere was charged with electricity. It was a relief when the short spring day drew to a close, and Mary came in with the tea-tray and a lighted lamp. By-and-by the guests began to arrive. From where I sat, I could hear the faint roll of wheels on the gravel as carriage after carriage drove up to the front entrance. It was the evening I always set apart for writing to Will, and I had never yet misused doing so since his departure; but to-night, pen and paper lay untouched before me. 'One day

can make no difference,' I said to myself; 'and to-morrow I may perhaps have so much more to tell him.' I sat like one who waits for the first thunder-clap.

Hour passed after hour, and no one came near me—a respite for which, under the circumstances, I was not unthankful. Now and then, when some distant door opened for a moment, a faint waft of music would reach me from the ballroom; but for that, I might have fancied myself the sole inmate of the great rambling old mansion, which to me always seemed big enough to house a regiment of soldiers. It was long after midnight before I went to bed, and when sleep at last came to me, it brought with it dark, troubled dreams, from which I awoke at daybreak feverish and unrefreshed. Meanwhile, strange things had happened of which I knew nothing.

Hitherto, I have only written of that which came within the scope of my own experience; what follows is derived from information supplied me by others, but chiefly by Mr Bruton.

It was four o'clock when the last of the guests drove away; day would not break till two hours later. Lady Clavison retired at once to her dressing-room. The first thing she did was to take off her diamonds and put them away in the oaken casket, clamped with silver, which stood there on the table, and had never been out of sight of her maid the whole evening, containing as it did a quantity of rings and other jewels which she had not required. Lady Clavison locked the casket with a key which never left her own possession, and a few minutes later dismissed her maid. Her ladyship's dressing-room had three doors—one opening into the corridor, one into her bedroom, and a third giving access to a pretty boudoir, where she generally partook of breakfast, read her letters, and issued her mandates for the day. The dressing-room had two windows, both of which were secured by iron bars, so that either ingress or egress by means of them was impossible. The boudoir had one window—a French one—opening on to a balcony, which in summer was crowded with flowers, but now, in this month of March, held only two or three tubs containing evergreens. Heavy winter curtains draped all the windows. Having dismissed Simpson, Lady Clavison proceeded to lock and bolt the door into the corridor, and then satisfied herself that the corresponding doors in the bed and morning rooms were also secure. Having extinguished the lamp in the latter, she locked the door of communication between it and the dressing-room, and further drew a thick *portière* across the doorway. In the dressing-room, a dim nightlight was left burning. These things done, Lady Clavison retired. Sir Francis had retired long ago; he never stayed up beyond a certain hour for any one. The door opening from the dressing-room to the bedroom was shut, but not bolted. Below stairs, Mrs Case, cross and thoroughly tired out, had hurried every one to bed, and in a little while silence and darkness reigned throughout the mansion.

Simpson, sitting in solitary confinement as it were, and keeping watch and ward over the jewel-case, had had one visitor in the course of the evening. Between eleven and twelve o'clock a tap had come at the dressing-room door, and

when it was opened, there stood Mrs Ion, her head shrouded in a black lace shawl. She was suffering from neuralgia, she said, and as she knew that her ladyship sometimes suffered from the same cause, she had come to see whether Simpson could supply her with any drops or tincture that would be likely to alleviate her pain. Simpson of course asked her in, and conducted her from the dressing-room, where the jewel-casket was standing on the table, into the boudoir, where she was able, from a phial kept by her ladyship, to supply Mrs Ion with some drops which would doubtless answer the required purpose. Notwithstanding the pain she was in, Mrs Ion's quick-glancing black eyes seemed to let nothing escape them. 'I have been in this room once before,' she said; 'it was on the occasion of my first interview here with her ladyship.' As she spoke, she drew aside the curtain that shrouded the window. 'Yes, of course—a bay-window with a balcony outside. I remember it quite well;' and with a profusion of thanks, she presently went her way.

The old house was wrapped in darkness and silence, but not in sleep. All through the long hours of the March night, sharp eyes were on the watch, quick ears on the alert both indoors and out. The stable clock had just struck five when from under a chintz-draped couch in Lady Clavison's boudoir there crept a lithe, under-sized, dark-visaged man, who must have been hidden there for some hours. Having struck a silent match, he lighted the lamp which Lady Clavison had extinguished, and then turned it down till nothing of it was visible but a tiny point of flame. His next proceeding was to glide behind the curtain, open the fastenings of the window, and suspend a rope with a steel hook at one end of it from the iron-work of the balcony. In case of a surprise, he would merely have to lower himself by means of the rope and plunge into the darkness beyond. He had brought a small case of tools with him; and to a craftsman so skilled in his peculiar line as he presumably was, the door between the boudoir and the dressing-room doubtless proved but a trifling obstacle. A quarter of an hour later, he emerged on the balcony with the precious casket in his arms. Peering cautiously down, he could just distinguish the outlines of a cloaked figure. He gave utterance to a low 'Hist!' and at once a voice gave it back like an echo. Agile as a gymnast, a moment later he clambered over the balcony and lowered himself and the casket to the ground. Alas! it was only to feel four bony knuckles inserted between the nape of his neck and his cravat, and to see several dark-coated figures that seemed to spring from nowhere close round him the instant his feet touched *terra firma*.

'Allow me to carry your parcel for you,' said a voice as some one took the casket out of his unresisting hands, while an instant later the light of a bull's-eye was flashed in his face.

'Ah ha, just as I suspected!' said he who had spoken before. 'At your old games, Mr Tony. We have been on the lookout for you for some time, and are glad to make your acquaintance once again.'

'Anyhow, you needn't throttle a fellow,' he contrived to gasp out.

They took him indoors, and there he found his

wife—Mrs Ion, as we must still call her—in charge of two constables.

It is enough to say that they were put on their trial at the next Cheriton assizes, and that both of them were sentenced to long but different terms of penal servitude. In the case of the man, two previous convictions were proved against him. Both of them were persons of good education and tolerable ability, and had started in life with fair prospects. How it happened that they had sunk step by step till they had come to be what they were now, was one of those sad mysteries of which unhappily we see but too many around us.

As a matter of course, the testimonials by means of which Mrs Ion had procured the situation at Normanfield turned out to be barefaced forgeries. It was the fame of Lady Clavison's diamonds which had first set the man's brain to work at concocting a scheme by means of which he hoped to make them his own; and it was through the agency of Mr Felix, who was connected with a Secret Service Office in London, that the plot ended in such a signal failure.

After her conviction, Mrs Ion, having nothing further either to gain or lose, made a full confession of her share in the bank robbery. In that instance the scheme had also emanated from her husband's plotting brain. The young woman who was her confederate in the nefarious transaction had died about a year later.

The particulars of Mrs Ion's confession were duly notified to Mr Yarrell, and through him to the directors of the Bemerton Banking Company. If the slightest shade of suspicion had ever lingered in their minds with regard to Will's honesty in the affair, it was now dispelled for ever. Mr Yarrell, in the name of the Board, wrote him a very handsome letter, in which he did not fail to state that he had always held him in the very highest esteem.

Will and I have been married for several years; but in our happy Australian home, as we sit in the veranda, on the still summer evenings, after the youngsters are in bed, we often call up the pictures of the past, and live over again in memory the events of which we have here endeavoured to give a plain and unvarnished narrative.

A FEW WORDS ON BRONCHITIS.

THERE are very few months in the year when bronchitis is not more or less rife among us. This complaint is, however, notwithstanding its prevalence, little understood by the general public. It is the fashion nowadays, not only with people generally, but also with many medical men, to call all colds in which a cough is one of the symptoms—bronchitis. It is really not so. Bronchitis may be contemporary—if we may so phrase it—with an ordinary common cold. A cough is always present in bronchitis; but bronchitis is not always indicated whenever there is a cough.

Before proceeding further, it will be well, in order that we may better understand the nature of the disease, to examine the structures in which the lesion of bronchitis takes place—namely, the lungs. Imagine a large tube, consisting of

muscular and fibrous tissue, terminating at one end in the throat, at the other end dividing into two tubes, or bifurcating, as it is called. These two are again subdivided; the resulting tubes are subdivided; and so on almost to infinity, terminating at last in little puffed-out, bag-like extremities. This mass of tubes, each running into a larger tube, comprises the whole mechanism which is called the lungs. It is easy to imagine that in the most minute divisions, two tubes have a common wall, and as a matter of fact this is so. The first tube is called the trachea, and with it we have now nothing to do. Its divisions are called the larger bronchi; its subdivisions, for a somewhat indefinite distance, but at any rate only so far as they can be traced easily with the naked eye, are called the smaller bronchi. It is here, then, that the disease bronchitis, or inflammation of the bronchi (the termination *-itis* in all medical words always means 'inflammation of'), is found. A similar disease is no doubt also found in the smaller tubes and their terminations; it is, however, called by another name, and the symptoms are somewhat different. Bronchitis is not altogether a correct term, for the walls of the bronchi are not affected with inflammation throughout their whole thickness, but only the thin lining membrane called the mucous membrane is so affected.

Inflammation, then, of this mucous membrane causes the minute blood-vessels running in its substance to become highly charged with blood and much congested. This condition, it is easy to see, would cause some swelling and thickening of the membrane, lessening the diameter of the tube, and so obstructing the passage of air through it. It also causes the surface to be reddened in the same manner as we have all observed in inflammation of the eye, a condition which is commonly called 'bloodshot.' From this congested, blood-charged, swollen, and thickened membrane, a sticky, glutinous discharge is poured forth, forming the expectoration—another symptom of the disease. During the time that the inflammatory condition is being induced, the patient constantly coughs a hard, dry, hacking cough, making him complain of a soreness down the middle of his chest, shaking the whole body in the effort, yet unable to expectorate. No sooner does this discharge appear, than the symptoms abate, the cough is less painful, and though probably frequent, is far less troublesome—the feverishness subsides.

Respecting the poultices—it is not the *drawing power* of the material of which the poultice is composed which does good, but simply the heat which is held by its substance, so that by leaving one of these applications on for a long time, in the hope of it *drawing*, does as much harm as good; for no sooner does it get cold than it begins to do harm, and counteracts what good its heat had already worked. Put on, then, a poultice as hot as it can be borne not only over a small part of the chest, but over the whole chest, both back and front, and remove it as soon as its heat has become absorbed.

The medicines used should never be taken with a view to stop the cough; coughing is nature's method of removing the offending matter, and is set up by the irritation of the inflamed surface. To remove the cough permanently, it,

is necessary to cure the inflammation, and by taking medicines which prevent the expectoration of the products of that inflammation simply extends and intensifies the disease. The medicines should tend to increase the ease of expectoration, to decrease the viscosity of its composition, and to allay and soothe the irritability of the inflamed membrane.

Bronchitis becomes a dangerous disease when the inflammation is so intense that the mucous membrane becomes so swollen and thickened that the blood can flow with difficulty through the lungs. We must here explain that all the blood in the body is passed through the lungs in the course of its circulation, and is there purified and aerated. Should it pass through less quickly than is natural, its purification is less rapid; its effect upon the tissues through which it passes is less beneficial. The heart has to expend more power in propelling it in its course, and the partial stagnation acts prejudicially upon the whole system.

RECENT HOAXES.

THE worst of English humour is that it is so apt to take a practical form. Practical joking is generally considered, except, indeed, by the unfortunate victim, the cream of English fun, and is tolerated in England to an extent that seems to a foreigner incredible. The most abominable form of practical joking is undoubtedly the hoax, and during the last few years hoaxing seems to have been on the increase. It was only a short while ago that a lively gentleman in one of the London suburbs was fined five pounds for sending a telegram to a friend's wife to say that that friend had seriously injured himself by burns and had gone to the hospital. Never was a penalty better deserved; and the culprit's ardour for practical joking will probably have cooled considerably by this time. A still more senseless and cruel hoax was perpetrated a short time before, when a man was informed that a Newcastle gentleman whose life he had once saved had left him an estate worth a thousand a year. Needless to state, the message was untrue. A still grosser case was the Liverpool hoax of last winter, when an advertisement was inserted in the papers for a large number of working-men to help in preparing the Exhibition grounds, all candidates for employment to bring spades and pickaxes. There were a great number of men out of work in the city: crowds of them streamed out to the Exhibition site, many of them having purchased, out of the remnants of their savings, the required tools; and when, after a weary walk, they reached the ground, they found the whole affair was a hoax. Can senselessness and barbarity in a so-called practical joke go much farther than this?

More humorous, though hardly less cruel, was the recent advertisement which drew some hundreds of would-be ladies of the ballet to the house of one of the best known and sternest of

the judges. Had it happened to Mr Justice A or Mr Justice B, there would have been nothing so very laughable in it; but occurring as it did to that member of the bench whose name every one instinctively associates with the majesty of the law and the scarlet and ermine of the assize courts, it was irresistible.

Of a more harmless kind was the Downing Street hoax of last July, when several furniture vans from different firms arrived—so it was said—at Mr Gladstone's official residence shortly after his resignation, to remove 'old collars, hats, coats, and similar effects;' such, at anyrate, was the object named on the postcards they had received.

It is tolerably well known that for an undergraduate to be abroad in the evening without cap and gown is an offence against the laws of his university, and if detected in his transgression by the proctors, the offending Cantab or Oxonian is invited to call on the proctor next morning to make a modest contribution to the university finances. In case he does not respond to the invitation with sufficient alacrity, a form is filled in requesting him to attend without delay. In 1884, at Oxford some evil-disposed person purloined a number of these forms, filled them in, and sent them to some sixty or seventy undergraduates; and the scene on the proctor's staircase next morning may be better imagined than described.

But perhaps the most notable hoax of recent years occurred about two years back. An American cotton-planter in the Southern States had, it was reported, after years of fruitless attempts, succeeded in crossing the cotton plant and the *oreca*, a species of hemp. The result had exceeded all expectations. The new plant bore only one blossom, of large size, of a fragrance similar to the magnolia—pink at first, and gradually fading to white. When this fell off, its seed-vessel swelled and swelled; till at last, when ripe, it burst, and revealed a large mass of cotton at least two pounds in weight, quite free from the troublesome seeds, which were all at the bottom of the pod. The account was copied from one paper into another; showers of letters came beseeching the lucky planter for a few seeds, and it was confidently predicted that the cotton industry would be revolutionised. The *Standard* and other English newspapers devoted a leading article to the new discovery. And after all this discussion, it turned out that the whole affair was the invention of some waggish Southern editor at a loss for a subject in the holiday season.

Finally, only in the last days of October, comes the news that a clergyman of Dublin has been led on a wildgoose chase into the wilds of Colorado by a message that a deceased Irish emigrant named Moore had left sixty thousand pounds to the Irish Protestant Church, which accordingly, on behalf of the Church, the clergyman set out to claim. Arrived at Denver, after the journey of so many thousand miles, the unfortunate gentleman found that the affair was the production of the fertile brain of a Denver lawyer. It is, however, some kind of satisfaction to hear that the State considers this very practical

joker too valuable an inventive genius to be lost sight of, and there is every probability that for the next few years he will have neither leisure nor opportunities for hoaxing the Britishers.

THE LAW OF TREASURE-TROVE.

THE Home Office notice as to accidentally discovered treasure, technically termed treasure-trove, effects a great change in the practice, if not in the law. Although the arrangement is avowedly a tentative one, and the rights of the Crown are expressly preserved, there can be little doubt that the regulations of the Lords of the Treasury will practically supersede the law, or at anyrate render it obsolete. In future, all finders of treasure-trove—on condition that they report their discoveries to the authorities—are to be entitled to all such articles as are not actually required for national institutions, and to the antiquarian value of those that are so required, less twenty per cent. But although the proceeding seems to be a little irregular, it is certainly a step in the right direction. The rights of the Crown to treasure-trove have without doubt led to many a 'find' being concealed. Old gold and silver coins of almost priceless value to numismatists, rare silver plate of unique interest to collectors, and objects innumerable of 'bigotry and virtue' have often been smuggled into the melting-pot, and converted with all speed into a shapeless mass of metal. This was the fate of a quantity of probably Saxon jewelry found by a labourer when ploughing a field near Hastings some twenty years ago. The plough unearthed a number of old rings and chains, which the ploughman sold for old brass at sixpence a pound. When melted down, the eleven pounds of old gold realised five hundred and thirty pounds. It is of course impossible to estimate the antiquarian value of such a find, and the case illustrates the temptations of the law. The sterling value of gold and silver is enough to tempt ignorant cupidity; and it is easy to conjure up instances in which objects of surpassing historical and archaeological interest have been recklessly destroyed. On this ground alone, then, the Home Office order is abundantly justified.

The right of the Crown to treasure-trove can at anyrate boast a respectable antiquity, for it rests upon the king's prerogative of coinage. This right, under which all gold and silver mines were declared to be royal, and in pursuance of which, under various statutes, the Crown has the right of purchasing the ore of those copper, tin, or lead mines in which gold or silver may be found, at the price of the baser metal, seems to have been founded upon the notion that it was necessary to supply the king with materials for the coinage; at least it is put no higher in the books.

'Treasure-trove' has been defined as consisting of 'money or coin, gold, silver, plate, or bullion; and must be found 'hidden.' In other words, nothing is included under the designation except gold and silver; and although it is practically immaterial where it is hidden, there must be evidence of actual hiding. Thus, it is not enough to show that it was lost or abandoned. The distinc-

tion is illustrative of the subtleties in which the law delights. If treasure be found on the ground or in the sea, and there is nothing to show who is the owner, it belongs to the finder; but if it be found buried in the earth or in the roof or walls of a house, it is treasure-trove, and belongs to the Crown. The difference lies in the intention of the owner. The fact of the hiding is held to be evidence of the owner's intention not to relinquish his rights of property. But, on the other hand, treasure which has been thrown into the sea otherwise than as flotsam, jetsam, or ligan, or left on the ground, is returned, as Blackstone puts it, 'into the common stock,' and so becomes the property of the finder, in the same way as if he were the first occupant. That 'finding is keeping' was at one period in the world's history also true in the case of treasure-trove; but with the growth of the royal prerogative it was excepted from the general rule. Grotius even speaks of the right of the Crown to hidden treasure as *jus commune et quasi gentium*; and it is not a little remarkable that it was recognised in his day in Germany, France, Spain, and Denmark, as well as in England.

The Goths seem literally to have been the first to declare the prince's property in buried treasure. The rich hoards hid by the Romans when driven out of their homes by the northern barbarians, fell a prey to the conquerors; and such was their value, that the generals made it a capital offence to conceal or appropriate them. This was, too, once the law of England. Both Glanville and Bracton, who wrote in the reigns of Henry II. and Henry III., record that the *occultatio thesauri inventi fraudulosa* was punishable with death. This is the more curious, since treasure-trove was never the subject of larceny; its concealment belonged to the class of misprisions or high misdemeanours. But the penalty was long since reduced to fine and imprisonment.

The holding an inquest upon treasure-trove is among the most ancient duties of the coroner. By a statute of Edward I., the coroner was required, on being certified by the king's bailiffs or other 'honest men of the country,' to go to the places where treasure was said to be found and to inquire who were the finders. It is quaintly suggested that it may well be perceived who is to be suspected of finding it, 'where one liveth riotously, haunting taverns, and hath done so a long time.' Moreover, the individual might be apprehended upon this suspicion.

But the new regulations will probably supersede all these old processes. In the future, there will be little temptation to conceal treasure-trove, because the finder will be quite as substantially rewarded by discovering it to the authorities. In a recent case, the Treasury gave a practical illustration of this. A number of old English gold coins of various dates were found by a workman in some old oak-beam which had been taken from a farmhouse near Luton. Of these, many proved of such rarity that they were sent to the national collections; but the Treasury gave orders that the finder should be paid for them at the rate of their value as old gold; while the remainder were returned to him. But it is a curious instance of the changes of the law, that we should now offer a substantial reward to deter persons from committing an offence

which in the 'good old times' was punished with death, and is still a high misdemeanour second only to misprision of treason and misprision of felony.

THE MONTH: SCIENCE AND ARTS.

DIFFERENT theories have been enumerated to account for the phenomena exhibited by the so-called 'variable' stars, which wax and wane, and which—many of them—have fixed periods of brightness and dullness. These theories are mostly of an unsatisfactory character, and have been necessarily little more than vague guesses. But at last the spectroscope seems to have done something towards solving the interesting problem involved in the behaviour of these distant bodies. Professor Sherman, of Yale, has brought before the American National Academy of Sciences the results of certain spectroscopic observations made upon the well-known variable star Beta Lyrae. Sometimes the spectrum given by this star will exhibit a number of bright lines, while at other times the lines are dark, some of these indicating the presence of magnesium and other metals. It is believed from these observations that the atmosphere of the star consists of three layers, 'the outer layer consisting of carbon and hydrocarbons, which occasionally descend into a subjacent layer of oxygen, and undergo combustion, and ultimately descend into the third layer, where the intense heat again separates the products of the combustion into their chemical elements.' This theory would explain the cause of the variability in the star, for it is obvious that such changes as are described must be attended by evolutions of bright light, which at times are absent.

In the course of a discussion which followed the reading of a paper before the Bristol Naturalists' Society relative to the Deposition of Dust and Smoke by Electricity, the suggestion was made, that in flour-mills and coal-mines, where the dust is of an inflammable nature, electricity would be dangerous, and that it would be better in such situations to water the ground with some solution of a sticky nature, to prevent the dust rising in the air. The President of the Society, Professor Ramsay, remarked that in Paris, some years ago, a solution of chloride of calcium had been used to water the roads, in order to prevent the formation of dust. But the remedy was worse than the disease, for in very hot weather the salt became dry, and formed in itself a dust of such an irritating nature that its use had to be abandoned. He also stated that in certain lead-works, the lead-dust was most effectually retained by passing the smoke through thick flannel bags, a process far more simple and cheaper than the employment of electricity.

According to the *Gas and Water Review*, pipes made of paper have lately been exhibited at Vienna, such pipes being designed to take the place of the iron tubes which convey gas and water beneath our streets. They are rolled from sheets of paper, like firework cases, and are coated on the inner side with an enamel the composition of which is a secret. The paper is also charged with asphalt, during the rolling operation. If it

be true, as stated, that these pipes will resist an internal pressure of two thousand pounds, although the material is only half an inch in thickness, many uses will be found for them. But we must remember that this idea of substituting paper pipes for those of iron and lead is one which crops up periodically, and never seems to get beyond the newspaper paragraph stage of existence.

The new submarine boat *Nautilus*, which was successfully tried the other day in presence of the Admiralty authorities, differs from its predecessors in the manner in which it is caused to sink or rise in the water at will. The machinery by which this upward and downward movement is brought about is as simple as it is efficient, and one is tempted to wonder why no one thought of it before. At each side of the vessel are four portholes, into which fit cylinders two feet in diameter. When these cylinders are projected outwards, as they can be by suitable gearing, the displacement of the boat is so much increased that the vessel rises to the surface; but when the cylinders are withdrawn into their sockets it will sink. The idea is such a good one that it seems at once to remove submarine travelling from romance to reality.

The principal use of submarine boats is for the attachment of torpedoes to the bottoms of ships in time of war. But surely the confidence of the authorities in torpedoes must be somewhat shaken after the recent experiments at Portsmouth, when a Whitehead torpedo, carefully fixed to the hull of the *Resistance*, failed to inflict any very serious damage to that old ironclad when it exploded. An American paper, commenting upon this experiment, pays the builders of our ships a compliment in contrasting its effects with the results of a recent accident which occurred to the flagship of the North Atlantic squadron. This ship, while lying in the Brooklyn navy yard, was run into by a small steam cutter, and a hole was opened in her nearly three feet long. It would thus seem that a ram is a more efficient weapon than a torpedo.

Dr Macgowan has sent to the American Agricultural Bureau a collection of shoes made of rice-straw, like those which are worn by the labouring people in the south of China. These shoes are made by the old and feeble who are unfit for hard labour, and cost only a few pence per pair. It is suggested that the manufacture of such shoes in the rice-producing regions of the Southern States would be a most useful innovation. It is also suggested that for nursery use, straw shoes would be invaluable, in giving greater freedom to the growing feet of children.

A new method of making cement from blast furnace-slag has recently been described. While the slag is in a molten condition, it is run into water, and thereby reduced to a state of fine powder. After being ground and screened, this powdered slag has added to it a certain proportion of slaked lime. The mixture is next placed in a machine which thoroughly incorporates its particles. This machine consists of a revolving drum containing a number of metal balls, and it is the constant crushing action of these balls which reduces the mixture submitted to them to a state of the finest possible division. It is claimed that this thorough mixing gives

to the cement a tensile strength almost double that of cement prepared without the help of the machine.

Dr Campbell Brown, the public analyst of Liverpool, recently gave evidence in some cases of pepper adulteration. In one case the pepper which he had examined contained upwards of sixty-five per cent. of rice and four per cent. of a hard ligneous tissue resembling ground olive stones. He explained that this worthless substance was imported into this country under the name of *poivrette*, or *pepperette*, for the purpose of increasing the weight and bulk of pepper. He had much difficulty in ascertaining the exact nature of this compound, which is advertised in circulars sent from Italy to English pepper merchants. It seems to consist of some kind of ground fruit stones or nut-shells, but ground olive stones seem to produce a substance most like it. The price of this rubbish is one penny a pound, or less than one-twelfth the price of pepper.

The carrier-pigeon service of Paris is almost as completely organised as is the telegraph system, for missives can be sent by the winged messengers to neighbouring forts and towns, and even to distant places in the provinces. The staff numbers two thousand five hundred trained birds. The Parisians, during the terrible days of the last siege, learned the value of the pigeon post, and the lesson has not been forgotten.

Our contemporary, *Iron*, remarks that a ton of coal contains far more ingredients than most people are aware of, and gives a list of substances which it yields in addition to gas. First of all, we have fifteen hundred pounds of coke, twenty gallons of ammonia water, and one hundred and forty pounds of tar. It is by the destructive distillation of this coal-tar that we find what a number of useful products are yielded by it. Pitch, creosote, heavy oils, naphtha of various kinds, alizarine, aniline, and toluene are some of these. From the last-named comes that new compound called saccharine (referred to elsewhere in this *Journal*, No. 159, p. 44), which is said to be two hundred and thirty times as sweet as the best sugar.

In spite of all these wonderful products, coal-tar is at present at such a low price in the market that some of the Gas Companies are using it for fuel for heating their retorts as a substitute for coke. The necessary alterations in the furnaces are not of a very important nature, and the whole of the smoke caused by the combustion of the tar is consumed as it is produced.

From various experiments detailed in the *Journal* of the Chemical Society, it would seem that copperas or green vitriol is a most valuable dressing for many descriptions of crops. These experiments took place in 1886 on different farms, and in each case the plot of land treated with the iron salt is compared with a plot of similar size not so treated. Here are some of the results: a plot measuring one-eighth of an acre and treated with fourteen pounds of copperas yielded five thousand two hundred and eighty-seven pounds of potatoes—showing an increase of four hundred pounds against a similar plot not treated. Another experiment showed that the copperas obtained from a field as good a crop of turnips

as did one treated with guano and dissolved bones. In an experiment on two fields of hay, the yield was nearly doubled in that one treated with the green crystals of copperas. Good results were also obtained with crops of onions, beans, and mangold-wurzel.

A new method of getting rid of the snow which had accumulated in the streets of London and stopped the traffic after the great fall during the Christmas holidays, was tried by the authorities of one parish with great success. The snow, instead of being carted away, was thrown upon a large tray which was kept hot by a portable boiler. By this method it was quickly melted and passed off into the drains as a stream of water. The snow-plough was also used with good effect in the main thoroughfares, clearing a broad track in the centre of the road, but raising up a hill of snow on either side, which did not conduce to the comfort of pedestrians.

In a Polish medical journal, Dr Bielczyk gives the results of some observations which he has made upon the health of workmen employed in petroleum wells. Acute poisoning follows the continued inhalation of gaseous matter from the wells, and this is accompanied by delirium; but the symptoms quickly subside when the patient is brought to the surface of the earth. The mortality among the workmen is not high, and they are all remarkably free from diseases of the respiratory organs and from infectious complaints. But they are subject to an eruption like acne, which affects the extremities. The same observer has found that raw petroleum is like carbolic acid, an excellent agent in the antiseptic treatment of wounds.

A Russian official Report states that the use of peat as fuel in factories is rapidly increasing, and from this circumstance, the price of peat-bogs has risen so much that a bog is worth more than a well-timbered forest. Last year, twenty-eight peat-bogs belonging to the Crown were being worked on leases, the total area being six thousand acres. This year there are thirty-three such bogs, with an area of fifty thousand acres, containing peat to the estimated extent of forty million Russian cubic fathoms. Many manufacturers are giving up the use of wood in favour of peat, and this is especially the case in the province of Vladimir. Peat-cutting machines are supplied chiefly from Moscow, but a few are sent from Belgium and Germany. The fuel has been tried for railway work, but so far without any great success.

A correspondent of one of the technical journals has been making some experiments in gastronomy, which certainly do credit to his power of overcoming natural prejudices. He caught by the aid of his terrier two plump barn rats, and after preparation, presented them to his cook to be made into a pie. The pie was, he states, delicious, and was voted a luxury by some friends who partook of it unwittingly. He also says that he can from experience safely recommend a hedgehog stewed in milk as a real delicacy. It is well known that roast hedgehog is a favourite dish with English gypsies. Our readers may also remember that during the last siege of Paris its inhabitants were reduced to such straits that vermin of this kind were often submitted to similar trial. One writer states that so palatable

were they that long after the siege, when beef and mutton were again plentiful, rats often found their way to the French bill of fare, disguised alike by cunning flavouring and fanciful names.

Mr O'Connor, the British *chargé d'affaires* at Pekin, has made a collection of Chinese picks, hoes, spades, hatchets, trowels, and razors, which are manufactured in that country at the present time. These, through the Foreign Office, have been sent to the Birmingham Council of the Chamber of Commerce, who will shortly exhibit them, and will invite inspection of them from the local tool and implement makers. It is believed that similar implements can be manufactured in this country of far better quality and at a lower rate than in China, and that they would, from their superiority, find a ready sale there. Some of these implements are of the most primitive form, and are cut from rough sheet-iron.

Some few years ago, there was much outcry against the use of aniline dyes in textile fabrics, and more especially in the case of hose, the use of which had been shown to be followed by skin disease of a serious character. The alarm has now spread to Persia, where strong measures have been adopted to prevent the importation of these dyes, on the ground that when used for carpets and brocades they are not only unstable and inartistic, but are positively injurious to health. In India, too, where the dyes have been much used, it is feared that the reputation of the beautiful fabrics made there will greatly suffer, unless stringent measures for the exclusion of aniline colours be adopted.

A Polish doctor has adopted a new method of employing the electric current for the treatment of neuralgia, which is said to bring relief in the severest cases. One pole of the battery is connected by a chain or wire with a concave metal plate lined with carbon. This carbon surface, after having been saturated with chloroform, is applied to the spot where pain is most intense. The current, weak at first, is gradually increased as the operation proceeds. A constant battery is said to be the right thing to use, although it does not quite appear how the current can be made to vary in the manner indicated. We should think that if the remedy be really effective, it would be much easier to apply it through the medium of one of those little magnetic machines which are now so commonly used for medical purposes.

Engineering gives some account of a new ammunition which is being adopted by the German army, and which is about to be manufactured under British patent rights at Millwall. The bullet is partly of lead and partly of steel, and is said to have a great penetrative power, and it is urged from the barrel by compressed powder. In what way this compressed powder differs from ordinary gunpowder, which, during manufacture, is submitted to an hydraulic pressure of one hundred and twenty tons to the square foot, we are at a loss to conceive. The new cartridge will keep for any length of time without deterioration and with safety, for the explosive portion need not be attached to them until they are required for use.

The steam yacht *Chic*, which is owned by Messrs Alley and McLellan of Glasgow, is being fitted with an electric light for submarine pur-

poses. The *Chic* is destined for the pearl-fisheries of Australia; and it is estimated that the light given will serve as a torch to the divers at a depth of seventeen fathoms. The necessary current is furnished by a Brush dynamo-machine.

So many terrible accidents through the use of petroleum lamps have been recorded, that we are pleased to notice any invention having for its object the rendering more safe that mode of illumination, which, from its cheapness, is most popular with the poorer classes. In the 'Shaftesbury' Lamp, invented by Mr E. Phillips, of 84 Bishopsgate Street Within, London, an extinguishing cap is so fixed over the burner that directly the lamp is knocked over or dropped from the hand, the flame is automatically caused to go out. The principle can be applied so cheaply, that the commonest forms of lamps can be made with the new attachment, and these will soon be in the market. Thus our poorer brethren will have at hand a brilliant method of illumination without any qualifying condition of danger in its use.

The results of some experiments made by Mr A. Richardson, of University College, Bristol, form a further very useful contribution to the controversy which has lately taken place with regard to the permanence of water-colours. But whereas the former disputants confined their attention almost exclusively to the injurious effects of light on pigments, Mr Richardson has also included the question of damp. By exposing pieces of paper washed over with various water-colours to the influence of light, of damp air and of dry air, he has made the following observations: cadmium, a yellow hitherto considered permanent, disappears in a fortnight in damp air; Prussian blue, another permanent colour, vanished in a month under like circumstances; while the lakes gamboge and indigo appear to be as unstable in damp as they are known to be in a dry atmosphere.

OCCASIONAL NOTES.

IRONING BY MACHINERY.

HOUSEWIVES will learn with interest that they can now procure mechanical ironers, and that the engineer, Mr Samuel Bash, 32 Cornhill, London, ever mindful of the requirements of the age, and watchful to lighten by his ingenuity the tasks of others, be those tasks ever so humble or so homely, has succeeded in perfecting a machine designed to press and iron with a precision equaling, if not excelling that of the human hand, every article that modern civilisation demands, from the highly priced mantle to the cheap pocket-handkerchief. The iron is suspended above the ironing-board by an attachment to a radiating arm, which, similar in principle to the well-known jib of a crane, moves freely around its axis, and thus commands the whole board. A pedal, worked by the foot of the operator, actuates a lever which brings the iron down on the article lying on the board, the intensity of the pressure thus produced being regulated by the force of the operator's foot. The table itself is, moreover, movable, and can be moved backwards and forwards by means of a handle,

the iron being held rigidly in its stand. The workman, whether sitting or standing, has thus full command over his machine.

The iron is heated internally by means of gas laid on through flexible hosing; and it will be perceived that a considerable saving both in the time and labour involved in constant reheating at the stove is effected. The labour entailed in handling the present irons, which range in weight from seven to twenty-eight pounds, is entirely obviated. A reduction in the cost of fuel of seventy-five per cent. has been calculated as likely to result. The machine is simple in construction and design, and is not liable to get out of order—a great desideratum in work of this class.

Irons of different shapes can readily be adjusted to the same machine; and throughout the wide range of the manifold industries of dressmaking, mantlemaking, hat and cap manufacture, besides laundry-work of all kinds, every process now performed by manual labour can be speedily accomplished by this machine.

The importance of the industries to be benefited by the mechanical ironer will be appreciated when it is stated that upwards of half a million persons are estimated to be employed in the United Kingdom in the trades enumerated above.

Any mechanical improvement tending to lighten the labour of so large a percentage of the population, or to render more healthy the conditions under which that labour is performed, cannot fail, more especially when viewed in conjunction with its other advantages, to command the attention of an age justly styled that of machinery.

DERMATINE.

A compound known as Dermatine has recently been placed before the public by the Dermatine Company, 13 Billiter Street, London, with a view to supersede gutta-percha, india-rubber, or leather in many of the varied uses to which these materials are applied. Dermatine, it is claimed, is unaffected by changes of heat and cold, and suffers no ill effects from exposure to moisture. The new material is furthermore uninjured by oil or grease—a great desideratum for any substance employed in connection with machinery—and offers, it is stated, a better resistance to the effects of friction than either india-rubber or leather.

There are many purposes to which Dermatine should be successfully applied: Belts for machinery in exposed situations; pump-valves of all descriptions; hydraulic packing, railway buffers, &c.; whilst its waterproof properties would doubtless render it specially suitable for that large class of goods comprising lawn-tennis shoes, boating shoes, mats, &c.

Dermatine is unaffected by high temperatures, and has been employed with success for the insulation of underground telegraph wires.

The new material has been subjected to various tests—immersion for a considerable period both in boiling oil and sulphuric acid; and it is satisfactory to learn that in each instance, the severe nature of the test notwithstanding, the substance was found to have received comparatively trivial injury. Belting made of Dermatine has after nearly a year's continuous running been

found free from any tendency to clog and in excellent condition in all respects.

Beyond all question, a large field exists for a material of this kind; and Dermatine has certainly thus far made good progress, and acquitted itself to the satisfaction of both introducer and consumer.

TRAINING COLLEGE FOR LADIES.

Within the last few months, there was opened in Edinburgh a small College for training educated women who intend to make teaching in secondary and higher schools for girls their profession, or who desire engagements in private families. It is undeniable that of late years great progress has been made in the more thorough and systematic teaching of women; but many a young girl fresh from her own class-work has felt at the outset of her career as a governess that she lacked the power of imparting her knowledge or the right method of teaching. In Germany, every girl who intends to teach receives a professional training; in England, two Colleges have been, within the last few years, turning out fully equipped governesses; but in Scotland, no kindred institution was to be found. It was therefore in the hope of making provision for this want that the Committee of the St George's Hall classes determined to establish a Training College in Edinburgh. It was judged best to make a small beginning last autumn; and thanks to the kind liberality of friends interested in the education of women, a sufficient fund was raised to enable the Committee to take premises in St George's Hall, Randolph Place. Miss Walker, whose name in connection with the St George's Hall classes is so well known, has been chosen Principal, and will be assisted by Fraulein Wuschack and Miss M'Lean, and also by several lecturers who have kindly offered honorary services. The course of instruction includes (1) Practice in class-teaching under supervision; (2) The theory of education, (a) the scientific basis of education, (b) elements of the art of education; (3) The general history of education in Europe since the revival of learning; (4) The practice of education, (a) methods, (b) school management. Further particulars of the work and all information can be had on application to the Principal, St George's Training College, Randolph Place, Edinburgh.

DISCOVERY OF TWO ROMAN POTTERY KILNS.

A curious discovery was recently made in the neighbourhood of Bury St Edmunds, at the sewerage works now being carried out at West Stow Heath, about four or five miles from the town. During the progress of the operations, two pottery kilns were laid open, similar to those which were found about six years ago by a well-known antiquary of Bury. These are pronounced to be of the late Roman period; and the place where they were found, though now a remote common, was, at the termination of the Roman occupation of Britain, an important station, possessing a considerable population, forming, in fact, a sort of suburb of the still larger Roman station of Icklingham. In the centre of the western part of the heath, called Wildham, is situated a Saxon

cemetery; and the whole region abounds with historical memories and localities, taking us back to the commencement, so to speak, of early English existence, and of the deepest interest to all antiquaries and archaeologists. The specimens of Roman work just unearthed are about five feet in diameter, the walls two feet eight inches in height, composed of tempered clay, which still shows, by its deep redness, that it was subjected at one period to the constant action of fire. One kiln was filled with blackened earth and broken vessels, which had probably been spoiled and thrown aside. Some of these were circular vases with handles in delicate buff-coloured clay. The second kiln was in a more broken condition than the first, yet contained more interesting remains, all the vessels being jars, saucers, pans, &c. of a dark colour, showing that black and slate-coloured work was specially produced in this kiln. A part of a bowl, of very fine red ware, with delicate red-coloured glaze, and ornamented with the figure of an animal resembling a dog, was discovered, together with a quantity of specimens of pottery of various kinds and in different states of preservation. The ground on which these sewerage works are carried on now belongs to the Bury St Edmunds town council, very fortunately, for no doubt a careful watch will be kept for any Roman relics which may be turned up by the workmen during the sewerage operations.

OIL CALMING A HEAVY SEA.

That oil properly used, as has been frequently urged in this *Journal*, has an extraordinary effect on troubled waters there can be no sort of doubt, and it is much to be regretted that the experiment is not brought into general and regular practice, and that every sea-going ship is not provided with a quantity of oil, and the proper apparatus to employ it, as a sea-calmer, if not a tempest-stiller. Its singular efficacy has been proved over and over again by English seamen in English ships and boats, and it is gratifying to find that the same practice has been tried in America with marked success. From a private letter, dated at Truxillo, in October last, from a passenger on board a large trading steamer plying between that place and New Orleans, we learn that the vessel encountered a terrible hurricane in the Caribbean Sea, early in that month, when the ship was disabled and became unmanageable, and lay in the trough of the sea in a dangerous position, and entirely at the mercy of the waves, which ever and anon broke over her. The captain, having tried almost every expedient to keep the ship's head up without success, determined to have recourse to the oil experiment. We give the result in the writer's own words: 'The captain now put four oil-bags on the windward side of the ship, when the oil acted like magic. The sea became smooth for at least twenty-five yards in that direction, and not a sea broke over her, while ahead and astern and to leeward, the ocean was in a wild rage, and the howling of the winds drowned all other sounds.' Here was an extraordinary escape from immediate danger; and the remedy was apparently repeated or continued, for the letter goes on to say that the ship lay for thirty hours in the trough of the sea free from the danger of broken water, and

protected by the application of the oil, until, at the end of that time, the hurricane passed away, and the ship was enabled to proceed on her voyage uninjured. Now it is not too much to say that, had it not been for the efficacy of the oil, the ship in her helpless condition must have succumbed to the violence of the hurricane, and probably all on board would have perished. Could not the Board of Trade be urged to lay down some rule making it incumbent on all sea-going ships to be provided with a certain quantity of oil for use in case of need?

HOW THE KING CAME HOME.

'Oh, why are you waiting, children,
And why are you watching the folk?'
'We are watching because the folks have said
The king comes home to-day—
The king on his prancing charger,
In his shining golden crown.
Oh, the bells will ring, the glad birds sing,
When the king comes back to the town.'

'Run home to your mothers, children;
In the land is pain and woe,
And the king, beyond the forest,
Fights with the Paynim foe.'
'But,' said the little children,
'The fight will soon be past.
We fain would wait, though the hour be late;
He will surely come at last.'

So the eager children waited
Till the closing of the day,
Till their eyes were tired of gazing
Along the dusty way;
But there came no sound of music,
No flashing golden crown;
And tears they shed, as they crept to bed,
When the round red sun went down.

But at the hour of midnight,
While the weary children slept,
Was heard within the city
The voice of them that kept:
Along the moonlit highway
Towards the sacred dome,
Dead on his shield, from the well-fought field—
'Twas thus the king came home.

FLORENCE TYLER.

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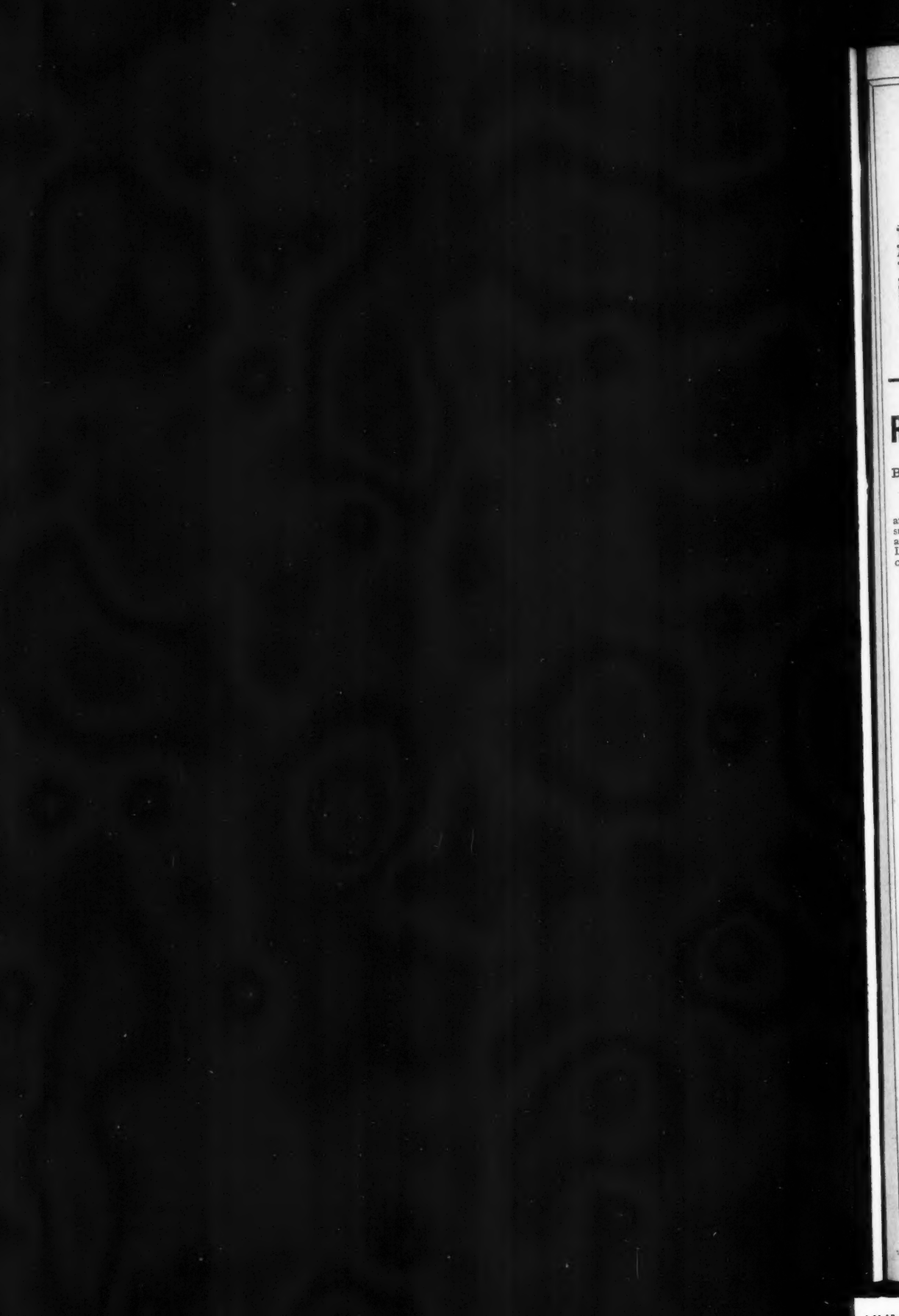
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Ring in the common love of good."

"Ring out old shapes of foul disease,
Ring out the narrowing lust of gold,
Ring out the thousand wars of old,
Ring in the thousand years of peace."

Tennyson.

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HEADACHE, DIARRHŒA, &c.—"HOTEL DE CIRONNE, MORAT, SWITZERLAND, Jan. 28, 1882.—Dear Sir,—Whilst staying for a short period at Morat, I met an old friend and patient of mine, who was likewise on a tour for the sake of his health. He had been suffering from giddiness when rising in the morning, perpetual nausea, and constant attacks of severe diarrhœa. He had consulted several London and Parisian doctors, without receiving any lasting remedy. I examined him professionally, yet I own I was puzzled at his case. He appeared to be in a thoroughly bad state, and not long for this world; but, bethinking me of the wonderful remedy my wife had given me whilst I was an invalid (suffering under somewhat similar yet much slighter circumstances), I recommended it to him. This remedy was ENO'S FRUIT SALT. I procured three bottles, and directed my patient to take a dose morning and night. He did so, and at the termination of a short period he expressed himself cured. Sir, I write to you (as a professional man) to thank you for your great invention, which has cured myself, my patient, and many other poor sufferers. I now wish to express to the public (should you think fit to make use of my testimonial), that I recommend ENO'S FRUIT SALT as a sure cure for Headache, Diarrhœa, Nausea, Giddiness, &c., and as a pleasant summer drink to those needing a mild aperient.—I am, yours sincerely" (an M.D.).

CAUTION.—Legal rights are protected in every civilised Country. Examine each Bottle, and see that the Capsule is marked "ENO'S FRUIT SALT." Without it you have been imposed on by worthless imitations. Sold by all Chemists. Directions in Sixteen Languages How to prevent Disease. Protection in every Country.

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FIFTH
SERIES

CHAMBERS'S

JOURNAL

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* 30	2 1 6	2 15 4	+ 40	2 14 9	3 7 5	50	4 1 7	4 12 1

* Thus, a person of 30 may secure £1000 at Death by a yearly payment, *during life*, of £20, 15s. This Premium in any other of the Scottish Mutual Offices would secure £800 only, instead of £1000.

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EDINBURGH, February 1887.

JAMES WATSON, *Manager.*

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